

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035204 A1

- (51) International Patent Classification⁷: **B01J 23/78**, 33/00, 35/02, 37/03, C11C 3/12
- (21) International Application Number: PCT/NL2003/000705
- (22) International Filing Date: 17 October 2003 (17.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02079362.6 18 October 2002 (18.10.2002) EP
- (71) Applicant (for all designated States except US): **ENGELHARD CORPORATION** [US/US]; 101 Wood Avenue, Iselin, NJ 08830-0770 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BERBEN, Pieter, Hildegardus [NL/NL]; Vinkenbuurt 12, NL-3951 CZ Maarn (NL); REKKER, Tjalling [NL/NL]; Marga Klompéstraat 4, NL-4105 JD Culemborg (NL).
- (74) Agent: **PRINS, A.W.**; NIEUWE PARKLAAN 97, NL-2587 BN DEN HAAG (NL).
- (81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NICKEL CATALYST FOR HYDROGENATION REACTIONS

(57) Abstract: The present invention relates to a catalyst nickel, silica, alumina and magnesium, wherein the nickel to magnesium atomic ratio is 5-75. In particular the present invention relates to a catalyst comprising nickel, silica, alumina and magnesium, wherein the nickel to silicon atomic ratio (Ni/Si) is 2 to 30 the nickel to aluminum atomic ratio (Ni/Al) is 9 to 40 and the nickel to magnesium atomic ratio (Ni/Mg) is 5-75. The invention further relates to a method for preparing such a catalyst. The invention further relates to a process for hydrogenating unsaturated organic compounds.